AMENDMENTS TO THE CLAIMS

Pursuant to 37 C.F.R. § 1.121, the following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Withdrawn) An alkaline earth metal-containing MFI zeolite catalyst for use in synthesizing a lower hydrocarbon from dimethyl ether and/or methanol, comprising Si/Al atomic ratio ranging from 30 to 400, an alkaline earth metal/Al atomic ratio ranging from 0.75 to 15, and an average particle diameter ranging from 0.05 to 2 μm.

2. (Withdrawn) The Alkaline earth metal containing MFI zeolite catalyst as set forth in claim 1, wherein said alkaline earth metal-containing MFI zeolite catalyst is a proton type.

3. (Currently amended) A process for preparing an alkaline earth metal-containing MFI structural zeolite catalyst for use in synthesizing a lower hydrocarbon from dimethyl ether and/or methanol, comprising:

(I) dissolving in water a zeolite raw material solution which contains a SiO_2 source, in an amount of 100 parts by mol, an aluminum oxide source in an amount ranging from 0.2 to 4.0 parts by mol, an alkaline source, an organic or inorganic salt of an alkaline earth metal in an amount ranging from 2 to 1000 parts by mol, and a structure directing agent in an amount ranging from 2 to 200 parts by mol, and adding a zeolite seed crystal ~~into~~ in the water such that the Si/Al atomic ratio ranges from 30 to 400, and an alkaline earth metal/Al atomic ratio ranges from 0.75 to 15, thereby providing an aqueous gel mixture containing an alkaline earth metal salt in an amount ranging from 0.1 to 60 parts by mol,

(II) subjecting the resultant aqueous gel mixture obtained in the dissolving step (I) to hydrothermal treatment by heating and stirring the resultant mixture under self-pressure at a temperature ranging from 60 to 250°C for 1 to 200 hours, and

(III) drying and calcining the reaction product obtained after the hydrothermal treatment step (II),

wherein the zeolite seed crystal which is added in the dissolving step (I) has an average particle diameter of not more than 1.5 μm and is added in an amount which corresponds to 1 to 60 mass % of the mass of an alkaline earth metal-containing MFI zeolite catalyst which is synthesized without adding said zeolite seed crystal, and

wherein the zeolite catalyst produced by process has an Si/Al atomic ratio ranging from 30 to 400, an alkaline earth metal / Al atomic ratio ranging from 0.75 to 15, and an average particle diameter ranging from 0.05 to 2μm.

4. (Previously presented) The process for preparing an alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 3, wherein the zeolite seed crystal has an average particle diameter of not more than 0.5 μm.

5. (Previously presented) The process for preparing an alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 3, wherein said drying and calcining step (III) is further followed by:

(IV) performing an ion exchange of said reaction product into a proton type through an acid treatment or an ion exchange of said reaction product into an ammonium type through an ammonium salt, and

(V) drying and calcining again said reaction product after said ion exchanging step (IV), thereby making the target catalyst a proton type.

6. (Cancelled)

7. (Withdrawn) A process for producing a lower hydrocarbon from dimethyl ether and/or methanol, wherein said lower hydrocarbon is an unsaturated hydrocarbon having 2 to 4 carbon atoms, and which comprises contacting said dimethyl ether and/methanol which is a supplied gas with said alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 1 or 2 under a condition of reaction temperature ranging from 400 to 650° C. and the weight hourly space velocity (WHSV), which is an amount corresponding to dimethyl ether supplied per unit catalyst mass and per unit time, ranging from 0.025 to 50 g-DME/(g-catalysthour), thereby making the yield of the carbon atoms which is contained in said lower hydrocarbon to the carbon, atoms which is contained in said supplied dimethyl ether and/or said methanol be not less than 60% by weight.

8. (previously presented) The process for preparing an alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 4, wherein said drying and calcining step (III) is further followed by:

(IV) performing an ion exchange of said reaction product into a proton type through an acid treatment or an ion exchange of said reaction product into an ammonium type through an ammonium slat, and

(V) drying and calcining again said reaction product after said ion exchange step (IV), thereby making the target catalyst a proton type.

9.(Previously presented) The process for preparing an alkaline earth metal-containing MFI seolite catalyst as set forth in claim 3, wherein the organic alkaline earth metal salt is selected from calcium acetate, strontium acetate, magnesium acetate, barium acetate, calcium propionate, strontium propionate, magnesium propionate, and barium propionate.

10. (Previously presented) The process for preparing an alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 3, wherein the inorganic alkaline earth metal salt is selected from calcium chloride, strontium chloride, magnesium chloride, barium chloride, calcium chloride, strontium chloride, magnesium chloride, and barium chloride.

11. (Previously presented) The process for preparing an alkaline earth metal-containing MFI zeolite catalyst as set forth in claim 3, wherein the zeolite seed crystal is an ammonium type MFI zeolite crystal having Si/Al atomic ratio of 70.